



## Corn Maze Social Event at Livermore's G&M Farms

LLNL postdocs outsmart six acres of corn and a cow with too many legs through knowledge of corn trivia



By Nathan Kugland

On October 27, 2011, nineteen postdocs, family, and friends set out to get temporarily lost in the annual corn maze designed and operated by G&M Farms, a local farm here in Livermore that also participates in the LLNL farmer's markets.

This year the corn maze was designed in the shape of a many-legged cow. I think the thing had at least six legs as a matter of fact. It took us nearly an hour to work our way through the maze. The winding path through the cornfield cow was broken into two portions and had directional clues at crucial junctions. Ten sets of multiple-choice trivia questions were set up throughout the maze. Picking the correct answer pointed you towards the finish and choosing the wrong one sent you deeper into the maze. There were several trivia categories, virtually ensuring that someone in your group would know the correct answer. Interestingly, it seems that LLNL postdocs are most familiar with corn. Other categories included cows, the Bible, interactive (count how many times something occurs in x activity),

Boy Scouts, and Girl Scouts. While many of us knew that it is the water inside a kernel of corn that causes it to pop when heated, we were stumped when asked the average weight of a newborn calf and I personally could not remember the entire "This Little Piggy" rhyme to calculate its word count.

Finishing the first half of the maze brought us back to the entrance, where we steeled ourselves and went back to finish the remaining half of the cow. I imagine that some parents unleash their children in the many paths of the maze and then appreciate an early exit from the seemingly unending rows of corn. We took advantage of the modestly priced snacks and refreshments that were being sold at the halfway point. The group dynamics changed constantly as people took different paths that eventually converged at a trivia point. This shifting composition lent itself well to mingling with coworkers and their families. As we were leaving the maze a crisp twilight was descending upon us, which gave the entire affair a very seasonal Halloween feel.

## Job Resources

[careers.llnl.gov](http://careers.llnl.gov) Official LLNL jobs site.

**Psi-K Network** [www.psi-k.org](http://www.psi-k.org)

Electronic structure theory news, events, jobs

[brightrecruits.com](http://brightrecruits.com)

A range of opportunities in physics & engineering.

**APS Careers in Physics** [www.aps.org/careers](http://www.aps.org/careers)

Gateway to physics jobs and careers.

**Naturejobs** [www.nature.com/naturejobs](http://www.nature.com/naturejobs)

Hot jobs & career guidance for scientists since 1999.

**Science Careers** [sciencecareers.sciencemag.org](http://sciencecareers.sciencemag.org)

Jobs & advice from the journal Science and the American Association for the Advancement of Science.

[www.postdocjobs.com](http://www.postdocjobs.com)

Hundreds of listings for postdocs, research associates, and other jobs that require a doctoral degree.

**Academic Keys** [www.academickeys.com](http://www.academickeys.com)

Jobs such as professor & university research scientist.

## Professional & Career Development

**U-Learn online library offers excellent content for PDs**

What do you do with your 25% “free energy”? Are you taking the time to learn something new? When you think about it, the postdoc “free” time is a really nice opportunity to grow professionally.

A great resource for professional learning is the U-Learn online library. Free to use with LLNL’s institutional subscription, U-learn has oodles of books and online training courses. Main topics are science/engineering, management/leadership, and IT technologies. At the moment I’m reading a great book on project management, perfect to help me better organize my experiments. I also found a helpful book on optical engineering that wasn’t available in the library.

Visit [ulearnfe.llnl.gov](http://ulearnfe.llnl.gov) to get started. —Nathan Kugland



## Minutes from the Postdoc Association Council Meeting on November 2<sup>nd</sup>, 2011

12:30 – 1:30 PM, West Cafeteria. Attendees: Ndoye, Wang, Schleife, Zachow, Kulp, Stanton, Simms, Howley, Rocha Leao, Kugland

*All are welcome to attend future meetings. Announcement will be made on the [postdoc@llnl.gov](mailto:postdoc@llnl.gov) mailing list.*

1) Brighter Holidays. Consensus is to support one family since it's very involved. Cedric suggested listing tasks (contacting family, driving, shopping, etc) and then assigning those to spread the burden. Lance will email the PD list to gauge interest.

2) Plans for Newsletter feature articles. Nathan wants to interview managers and other influential people (e.g. Tomas Diaz de la Rubia). Ask how they did it, what advice they have for PDs. Kris agreed that it's worth doing the interview in person, and that managers would make time for us. Newsletter team has a list of questions; Nathan will distribute for feedback. Kris said that people would want to do this to get to meet a manager.

Other ideas for feature articles: Office of Strategic outcomes, Lawrence Fellows perspective (what's different), local businesses sponsoring events, how to do US taxes, life in the Bay Area, interview Parney Albright (new director).

3) Get a DOE-owned camera for our LLPA use. Christine thinks that it makes the most sense to buy one to avoid custodian problems.

4) Newsletter review and release. Brought up by Annie Kersting. Might be worth doing so we can show the newsletter on external web pages. Nathan will follow up with Annie.

5) FY12 budget. Lance prepared proposed budget of \$8000 for T-shirts, brown bag refreshments, annual luncheon, and winter holiday party. Unfortunately, Kris said that budget was actually due October 31. Date was poorly communicated to her; now it's too late to request more money. \$3500 should be available starting January 1st. Alternately, we can organize a self-funded event (i.e. sell tickets) any time.

6) Membership with National Postdoc Association. Kris said that we are no longer an institutional member. We don't look enough like a university; not enough obvious benefit. Could fund a PD to attend the national meeting. Decision was reached to not participate.

7) Winter Holiday Party. Done off site. Andre and Kirsten will check with venues. Can sell tickets and use money for refreshments.

8) T-shirts. Need contest for design ideas. Promote via email & newsletter. Can offer for free, charge a fee, provide free for coming to a brown bag, or charge a reduced fee. Kirsten pointed out that real women's tees should be offered, not just small men's sizes. Review and release might be needed. Design idea: stamped image "Released" along with an auspices statement.

## Did You Know...?

Postdoc input is highly desired for Spigit, the lab's new collaborative problem solving tool! As postdocs we have a reputation for thinking up good ideas, so the lab management would really like to get our input to help find solutions for some tough problems.

Check it out: [spigit.llnl.gov](http://spigit.llnl.gov)

Current challenges: new drug development, flagship NNSA facilities, DOD energy use, better energy grids.



## Upcoming Events

**Physics & Life Sciences Postdoc Research Seminar**  
B151 R1209 (Stevenson Room). Refreshments served.

Tuesday, November 15, 2011, 11 AM

Richard Gostic CSD

Ate Visser, CSD "Noble Gas Isotope Hydrology: How old is our drinking water?"

Tuesday, December 6, 2011, 11 AM

Amy Lazicki CMMD

Irakli Garishvili Physics

**Musical Interest Networking Group**

Tuesday November 15, 5:15 – 6 PM, T4675

**Thanksgiving Holiday**

Thursday & Friday, November 24 & 25

No Paper/Work newsletter this week.

**Career Development Event (see below for more info)**

Tuesday, November 29, all afternoon: 12:00 – 5:00 PM

Martinelli Event Center, 3585 Greenville Road, Livermore

## Career Development Event: "Building your career at the Lab"

Finding the right opportunities, contacts and understanding how the lab works

The Institutional Postdoc Program Board will be sponsoring a career development offsite on Tuesday, November 29th, from 12-5pm, at the Martinelli Center. The focus of the afternoon will be on understanding the goals of the lab's programs and identifying opportunities and contacts in those areas. There will also be a presentation about how the lab's money works, "Finance 101," that provides insight into the financial workings of the lab from congressional debate to indirect rates. Lunch, snacks and plenty of opportunity to chat with both managers and your fellow postdocs will be provided.

## Postdoc-Related Highlights from Notes to the Director

### Monte Carlo Method improved

In the October 24 online issue of the *Proceedings of the National Academy of Sciences* (PNAS), LLNL postdoc Jerome P. Nilmeier and colleagues from ANL, LBNL, and UC Berkeley describe a new Monte Carlo sampling method based on nonequilibrium dynamics. Monte Carlo simulation is a powerful tool for studying the equilibrium properties of matter; however, in complex condensed-phase systems, standard Monte Carlo methods "waste" time and computer cycles exploring "uninteresting" states of the system. The new technique biases the simulation (in a manner that can be later corrected for) so that it samples "interesting" states of the system more frequently, thus obtaining better statistics. The authors report an order of magnitude improvement in computational efficiency for the system described in their PNAS paper, but for some systems, the new method could offer several orders of magnitude improvement. (*Jerome did this work before he came to LLNL.*)

### LLNL measures the quality of LCLS' free-electron laser x-rays

LLNL researchers Regina Soufli, Stefan Hau-Riege, and Monica Fernandez-Perea are part of the international team that characterized for the first time the spatial and temporal coherence of single, femtosecond-duration x-ray pulses generated by the LINAC Coherent Light Source (LCLS) free-electron laser, at the SLAC National Accelerator Laboratory. Their measurements, which are reported in the Sept. 30 edition of *Physical Review Letters* show that LCLS produces the brightest x-ray pulses ever measured, and will enable unique, coherence-based scientific experiments. The paper was also highlighted in a Physics focus commentary. Only papers that the editors of the *Physical Review* journals believe are of particular importance and/or intrinsic interest are highlighted in this manner.



## Selected Recent Research Publications by LLNL Postdocs

**Bold** = LLNL Postdoc. We have received many contributions and will steadily publish them all over the next several newsletters. Broadcast your achievements here! Make new connections & help us see well we are doing collectively. **Guidelines:** 1) Peer-reviewed publications only, no manuscripts in progress; 2) Your affiliation must be LLNL; 3) Note which authors are LLNL postdocs, and in what division & group; 4) Send the full citation including title to Cedric ([rochaleao1@llnl.gov](mailto:rochaleao1@llnl.gov)).

*CMMD/Quantum Simulations Group:* **B.C. Wood**, T. Ogitsu, and E. Schwegler, "Ab-initio modeling of water-semiconductor interfaces for photocatalytic water splitting: The role of surface oxygen and hydroxyl," *Journal of Photonics for Energy* 1, 016002 (2011).

*Computation/CASC/Scientific Computing Group:* G. B. McFadden, S. R. Coriell and **P. A. Lott**, "Onset of Morphological Instability in Two Binary Liquid Layers." *Physics of Fluids*. 23 (4) 044102, 2011

*Computation/CASC/Scientific Computing Group:* **Jeffrey M. Connors**, Eleanor W. Jenkins and Leo G. Rebholz, "Small-scale divergence penalization for incompressible flow problems via time relaxation," *International Journal of Computer Mathematics*, Vol. 88, No. 15, 2011, pp. 3202-3216.

*National Security Engineering Division/SIAS:* Nimar Arora, Stuart Russell, **Paul Kidwell**, Erik Sudderth, "Global Seismic Monitoring: A Bayesian Approach," *Proc. of 25th Conference of Association for the Advancement of Artificial Intelligence (AAAI)*, 2011.

*NIF/Plasma Physics & High Energy Density Science:* Ryutov, D. D, **Kugland, N. L**, Park, H.-S, Pollaine, S. M, Remington, B. A, **Ross, J. S.** "Collisional current drive in two interpenetrating plasma jets," *PhysPlasmas* (2011) vol. 18 pp. 104504.

*NIF/Photon Science Division:* **Amber L. Bullington**, Steven B. Sutton, Andy J. Bayramian, John A. Caird, Robert J. Deri, Al C. Erlandson, Mark A. Henesian, "Thermal birefringence and depolarization compensation in glass-based high-average-power laser systems," *Proc. of SPIE* Vol. 7916, 2011

*NIF/Plasma Physics:* Sebastien Le Pape, Paul Neumayer, Carsten Fortmann, Tilo Doeppner, Paul Davis, **Andrea Kritcher**, Otto Landen, and Siegfried Glenzer, "X-ray radiography and scattering diagnosis of dense shock-compressed matter," *Phys. Plasmas*, 17 056309 (2010).

*NIF/ICF and High Energy Density Science:* Halvorson, C. Houck T., Macphee, A., **Opachich, Y.P.**, Lahowe D., Copsey, B., "High energy photocathodes for laser fusion diagnostics," *Rev. Sci. Instrum.*, 2010. 81(10): p. 10E309.

*PLS/Atmospheric, Earth, Energy/Experimental and Applied Geophysics Group:* **W. L. Du Frane**, L. A. Stern, K. A. Weitemeyer, S. Constable, J. C. Pinkston, and J. J. Roberts (2011), Electrical properties of polycrystalline methane hydrate, *Geophys. Res. Lett.*, 38, L09313. doi:10.1029/2011GL047243.

*PLS/Atmospheric, Earth, Energy:* X. Tian, J. Zhang, S. Si, **J. Wang**, Y. Chen, and Z. Zhang, "SKS splitting measurements with horizontal component misalignment," *Geophysical Journal International*. 185(1): 329-340 (2011)

*PLS/Chemical Sciences:* C.K. Westbrook, C.V. Naik, O. Herbinet, W.J. Pitz, M. Mehl, **S.M. Sarathy**, and H.J. Curran, "Detailed Chemical Kinetic Reaction Mechanisms for Soy and Rapeseed Biodiesel Fuels," *Combustion and Flame*, 2011, Vol. 158, 742-755.

*PLS/Chemical Sciences:* Dinh, L. N.; **Mayer, B. P.**; Maiti, A.; Chinn, S. C.; Maxwell, R. S., "Molecular weight distributions of irradiated siloxane-based elastomers: A complementary study by statistical modeling and multiple quantum nuclear magnetic resonance." *J App Phys*, 109, 9, 2011.

## Selected Recent Research Publications by LLNL Postdocs, Continued

*PLS/Condensed Matter & Materials:* **A. M. Teweldeberhan**, J. L. Dubois, and S. A. Bonev, "High-Pressure Phases of Calcium: Density-Functional Theory and Diffusion Quantum Monte Carlo Approach," *Phys. Rev. Lett.* 105, 235503 (2010)

*PLS/Condensed Matter and Materials:* **C. Reina**, J. Marian and M. Ortiz, "Nanovoid nucleation by vacancy aggregation and vacancy-cluster coarsening in high-purity metallic single crystals," *Physical Rev. B* 84, 104117 (2001).

*PLS/Condensed Matter and Materials:* **S. Queyreau**, M. Gilbert, J. Marian, B.D. Wirth, "Edge mobilities in bcc Iron obtained by molecular dynamics," *Phys. Rev. B* 84, 064106 (2011),

*PLS/Physics/Optical Sciences Group:* **M. D. Schneider**, S. Cole, C. S. Frenk, and I. Szapudi, "Fast Generation of Ensembles of Cosmological N-body Simulations Via Mode Resampling," *The Astrophysical Journal* 737 p. 11, Aug. 2011.

*PLS/Physics/Optical Sciences Group:* Bendek, E., **Ammons, S.M.**; Milster, T.; and Guyon, O., "Dynamic distortion calibration using a diffracting pupil: high precision astrometry laboratory demonstration for exoplanet detection," *SPIE*, 8151, 26. 2011

*PLS/Physics/X-ray Science and Technology Group:* J. I. Larruquert, J. A. Mendez, J. A. Aznarez, M. Vidal-Dasilva, S. Garcia-Cortes, L. Rodriguez-de Marcos, **M. Fernandez-Perea**, "GOLD's coatings and testing facilities for ISSIS-WSO," *Astrophysics and Space Science* 335, 305-309 (2011).

## Meet the Postdoc Association Leadership Council

Andre Schleife works on parameter-free models of materials when he is not busy for the postdoc association



Hello, my name is Andre and in February I joined the Quantum Simulation Group at LLNL as a postdoc. Currently, I am working on a very interesting and ambitious project aiming for a parameter-free description of the electron-ion dynamics of different materials. During my time as a PhD student in Germany I acquired a thorough background in electronic-structure theory. This was the ideal foundation for my current project and also the reason why I decided for a postdoc at the lab: in the field that I am working in, there is a strong need for powerful computational facilities, hence, the lab is a wonderful place to do cutting-edge and high-impact research.

Ever since I came to LLNL I have liked how easy it is to meet new interesting postdoc colleagues here at different occasions such as Dietrich's get-togethers or the barbeque in the summer. The postdoc community in the Lab is so diverse and I think that it is this vibrant atmosphere that forms an ideal basis for collaborations as well as making new friends. Therefore, I wanted to help to foster this community as well as I can. After Cedric initially sparked my interest in the council of the LLPA, I followed his suggestion and decided to participate. As one of the former editors of the newsletter of the European Theoretical Spectroscopy Facility, I am now contributing my experience in order to make "Paper/Work" a success. I also like to help organizing postdoc events, so be aware of what is coming up in the future!

## LLNL Postdoc Association Leadership Council

### President

Lance Simms

### Vice President

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Mandoye Ndoye

### Newsletter Team

Nathan Kugland, Andre Schleife, Cedric Rocha-Leao, Kirsten Howley

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